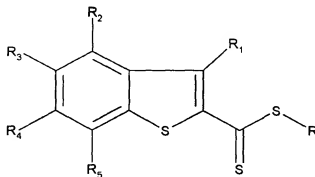


**IMPROVED UTILIZATION OF PHOSPHORUS PENTASULFIDE IN  
THIONYLATIONS USING PHASE TRANSFER CATALYSIS**

**ABSTRACT OF THE DISCLOSURE**

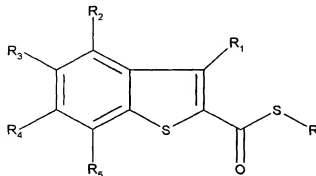
5 A method is disclosed for the preparation of benzo[b]thiophenecarbodithioic esters of the formula:



wherein R is alkyl, R<sub>1</sub> is hydrogen, halogen, or alkyl, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, and R<sub>5</sub> are independently

selected from the group consisting of hydrogen, halogen, alkyl, alkoxy, alkylthio, trifluoromethyl, cyano, and aryl,

wherein said method comprises reacting an equivalent of an S-thiol ester of the formula:



**0151-CP**

with one-third of an equivalent of  $P_2S_5$ , 2 equivalents of at least one alkali metal carbonate, about 2.5 mole percent of a phase transfer catalyst, and a catalytic amount of water in hot toluene.